

## Two new species of *Lyria* (Gastropoda: Volutidae) from New Caledonian waters

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**KEYWORDS.** Gastropoda, Volutidae, New Caledonia, *Lyria poppei* sp. nov., *Lyria grandidieri* sp. nov.

**ABSTRACT.** Two new species of Volutidae, *Lyria poppei* sp. nov., *Lyria grandidieri* sp. nov. are described from New Caledonia and compared with their relatives.

### INTRODUCTION

Until recently, only five *Lyria* were known living in deep water off New Caledonia: *Lyria (Lyria) habei* Okutani, 1979, *Lyria (Plicolyria) boholensis* Poppe, 1987; *Lyria (Plicolyria) exorata* Bouchet & Poppe, 1988; *Lyria (Plicolyria) kuniene* Bouchet, 1979 and *Lyria (Plicolyria) planicostata* (Sowerby III, 1903). Since three years, experimental dredgings in deep waters off New Caledonia, conducted by the Muséum national d'Histoire naturelle (MNHN), Paris, and IRD (Expédition *Musorstom* 5), as well as by the private vessel *TUI2*, have led to the discovery of three new *Lyria*. One of these, *Lyria (Lyria) guionneti* Poppe, 2001 is already known to science, two others are described here.

### SYSTEMATICS

Class **GASTROPODA**

Superfamily **VOLUTOIDEA**

Family **VOLUTIDAE** Rafinesque, 1815

Subfamily **VOLUTINAE** Rafinesque, 1815

Tribe **Lyrinii** Pilsbry & Olsson, 1954

Genus *Lyria* Gray, 1847

Subgenus *Plicolyria* Bail & Poppe, 2001

Type species: *Lyria planicostata* (Sowerby III, 1903)

*Lyria (Plicolyria) poppei* sp. nov.

Figs 1-2, 5-10

**Type Material.** Holotype: length 47.2 mm, width 18.3 mm, Muséum national d'Histoire naturelle (MNHN), Paris.

Campagne *Norfolk 1*, N/O *Alis*, June 2001, Station DW 1651, New Caledonia, Norfolk Ridge, E Jumeau Banc, 23.27.3' S - 167.50.4' E, 409 - 439 m.

Paratype 1: length 43.0 mm, width 17.8 mm

Paratype 2: length 32.0 mm, width 14.0 mm

Paratype 3: length 33.5 mm, width 14.4 mm

Paratype 4: length 37.0 mm, width 14.7 mm

Paratype 5: length 30.2 mm, width 13.3 mm

**Type locality.** 23.46' S - 168.17 E, N of Norfolk Ridge.

**Range.** At present only known from the Norfolk Ridge, New Caledonia.

**Habitat.** On rocky and gravel bottom between 276 and 450 m.

**Description.** Shell light, solid, ovate fusiform, polished surface. Protoconch bulbous of 1.75 elevated smooth whorls.

Transition of protoconch into teleoconch gradual. Teleoconch with 5-6 broad convex whorls, slightly shouldered with rather deep impressed suture. Spire moderately high, 40% of total length. Sculpture consisting of strong rounded axial ribs: 10-11 broad, well-defined on first whorls, 8-9 on body whorl, adapically attenuated on adult shell. No spiral sculpture. Aperture high, narrow. Columella with a thin

callus bearing numerous white plaits as follows: one anterior small, next three stronger of which two first more prominent, followed adapically by 5-7 distinct lirae. Siphonal notch shallow and broad. Background colour light beige, marked with three spiral row of brown blotches on the body whorl, merging in some specimens into continuous bands, overlaid by a spiral pattern of thin brown lines, sometimes absent on the intercostal spaces, often gathered into three bundles, the anterior one the thicker, limiting two pale

bands without any marks.

Aperture beige. Columella and plaits white.

**Animal.** Foot and head of the live animal is cream with a pattern of closely spaced radiating reddish lines, forming

stripes on the siphon and tentacles.

Anatomy and radula could not be studied.

**Discussion.** *Lyria (Plicolyria) poppei* can be compared with the other members of the subgenus featured by following

characters. Shells large, thick, with prominent broad axial ribs and a small to very small protoconch. Ground colour tan brown with a silky gloss, most often with a spiral line pattern. Lives in deep waters of the W Pacific Ocean only.

*Lyria (Plicolyria) kumiene* Bouchet, 1979

Most of its conchological characters such as raised bulbous protoconch and general shape show a close relationship with *L. poppei*. Nevertheless it differs by: a more elevated protoconch bearing a whorl more, a less convex and higher spire, thinner and more acute axial ribs and a spiral pattern that consists of only dashes regularly spaced on the summit of the axial ribs with a faint row, often obsolete, of pale brown blotches. Its NE range does not overlap that of *L. poppei*.

*Lyria (Plicolyria) boholensis* Poppe, 1987

This species is usually found in Philippine waters and in dispersed localities, including the New Caledonian waters. It bears the same pattern of bundles of spiral lines but it is discontinuous, marking the ribs only with rare small brown blotches. It differs also by its minute protoconch, a more solid structure and laterally pinched axial ribs.

*Lyria (Plicolyria) planicostata* (Sowerby III, 1903)

Occasionally found in New Caledonian waters, this species is very close to *L. boholensis*, sharing the same minute protoconch and general outline. It differs by its large size with thick axial ribs. Its surface bears rows of deep brown blotches and is overlaid by a dense pattern of minutely spaced spiral lines without any discontinuity.

**Remarks.** This species is closely related to *L. kumiene*. Some specimens of *L. poppei* have an almost identical pattern and one may consider it as a subspecies of the latter. However, besides its remote and very localised endemism on a small submarine plateau, differences based upon the morphological characters are constant and no intermediate specimens are found.

**Etymology.** The specific name honours Guido Poppe

#### Plate 1 (Figs 1-12)

1-2. *Lyria (Plicolyria) poppei*

1. Holotype, 47.2 x 18.4 mm, ventral view; 2. Holotype, dorsal view.

3-4 *Lyria (Plicolyria) kumiene* Bouchet, 1979, 71 mm.

5-10. *Lyria (Plicolyria) poppei*

5. Paratype 2, 32 x 14 mm, ventral view; 6. Paratype 1, 43.0 x 17.8 mm, dorsal view; 7. Paratype 2, 32 x 14 mm, dorsal view; 8. Paratype 1. Detail of the protoconch; 9. Paratype 3, 33.5 x 14.4 mm, dorsal view; 10. Holotype, detail of spire.

11. *Lyria (Plicolyria) kumiene* Bouchet, 1979, 71 mm, detail of spire; 12. *Lyria (Plicolyria) poppei*, paratype 4, 37.0 x 14.7 mm. Dorsal view.

for his considerable contribution to the advancement of the knowledge of Volutidae.

Subgenus *Lyria* Gray, 184

Type species: *Lyria nucleus* (Lamarck, 1811)

*Lyria (Lyria) grandidieri* n. sp.

Figs 1-4, 7

**Type Material.** Muséum national d'Histoire naturelle (MNHN), Paris

1- Specimens from TUI2-Expedition donated to MNHN:

Holotype: length 37.0 mm, width 16.1 mm

Paratype 1: length 31.2 mm, width 14.8 mm

Paratype 2: length 27.4 mm, width 13.1 mm

Four additional specimens and one fragment.

2- Specimens from Musorstom 5 Expedition *Coriolis* Stn 301, 22°07 S, 159°25 E, (487-610 m)

Paratype 3: length 25.2 mm, width 11.4 mm

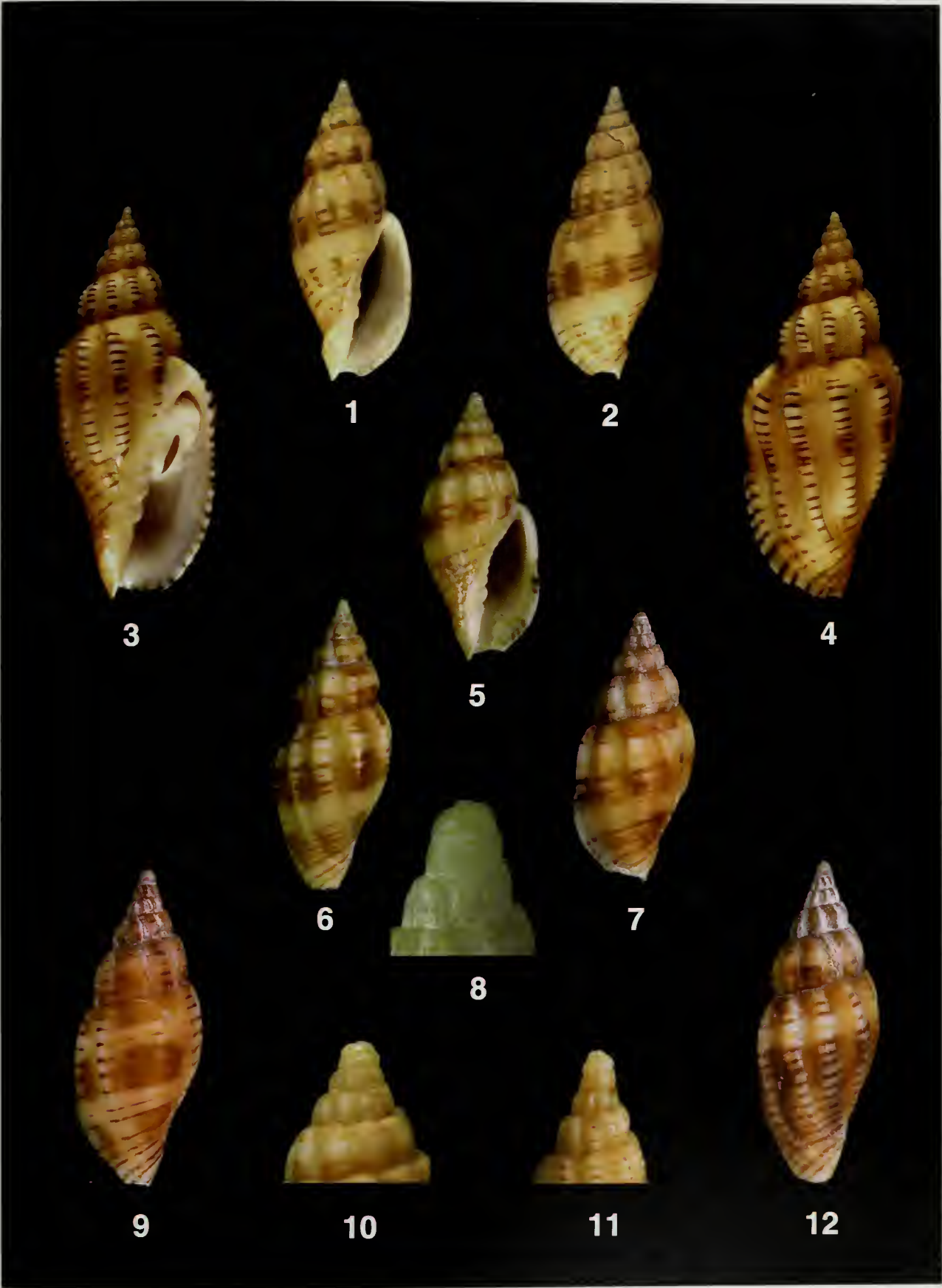
Paratype 4: length 21.2 mm, width 10.2 mm

**Type locality.** Off Favre Islet, N Entrecasteaux Reefs, N New Caledonia.

**Range.** Only known from the type locality (TUI2) and from the Bellona Plateau (Musorstom 5). Its actual geographical range is probably larger and the species possibly lives on the deepwater plateaus around the known localities.

**Habitat.** On hard bottom, between 280 m and 500 m deep.

**Description.** Shell small, solid, ovate, with silky surface. Protoconch bulbous of 2 glossy smooth whorls. Transition of protoconch into teleoconch short and gradual. Teleoconch of 5.5, convex whorls with a deep impressed suture. Spire 44% of the total shell length. Sculpture consisting of 9-10 strong, low and rounded orthocone axial ribs, more attenuated on adult shell and not reaching anterior third of body whorl. Spiral sculpture of very faint grooves, far apart and hardly visible on the posterior two-thirds of the last whorl, more numerous and more conspicuous towards the siphonal notch. Outer lip thickened and flared at its anterior half. Columella with glossy callus bearing 9-10 distinct plaits, the first three, the strongest.





Siphonal notch very shallow and broad. Background colour plain buff with. On some specimens, a very faint brown spiral pattern marked on the body whorl by a subsutural band of square blotches and two rows of very close irregular dashes; anterior one largest. Protoconch white, aperture and columellar buff.

**Animal.** Foot and head of the live animal are white with a pattern of closely spaced radiating dark red lines, forming stripes on the siphon with a white ring on its top. Anatomy and radula could not be studied.

**Discussion.** At supraspecific level, this species is placed in *Lyria* s.s. of which characteristics are: Protoconch small, last whorl most often large, species variable, from smooth to axially ribbed, glossy or dull. No thick columellar callus.

*L. grandidieri* differs from the others by its plain buff colouration, faint pattern and wide low ribs.

Other species of the subgenus *Lyria* s.s. living in the same part of the Indopacific region are *Lyria* (*Lyria*) *cassidula* (Reeve, 1849); *Lyria* (*Lyria*) *deliciosa* (Montrouzier, 1859); *Lyria* (*Lyria*) *habei* Okutani, 1979; *Lyria* (*Lyria*) *insignata* Iredale, 1940; *Lyria* (*Lyria*) *laseroni* (Iredale, 1937); *Lyria* (*Lyria*) *miclens* (Lamarck, 1811) and *Lyria* (*Lyria*) *pallidula* Habe, 1962.

All have smaller protoconch, numerous narrow axial ribs on the first whorls, a rich spiral pattern on a glossy surface and a different columellar plaits structure often reduced to the three anterior ones. Its close relative is *Lyria* (*Lyria*) *gnionmeti* Poppe, 2001, which shares identical characters such as the shape of the protoconch, deep suture, general outline and columellar plaits-structure. The bigger size and its smooth surface with a richly coloured pattern exclude any confusion.

**Remarks.** The average size of adult specimens is around 35 mm in length. Some specimens are larger as it appears by a fragment with the extrapolated size of 45 mm. *L. gnionmeti* and *L. grandidieri* differ slightly from the

other species of the subgenus *Lyria* s.s.. They can be considered temporarily as forming a subgroup within this subgenus.

**Etymology.** The specific name honours Gilles Grandidier, the young captain of the boat *TUI2* whose deep dredgings yielded the type material herein described.

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#### Plate 2 (Figs 1-7)

##### 1-4. *Lyria* (*Lyria*) *grandidieri*

1. Paratype 2. 27.4 x 13.1 mm, ventral view; 2. Holotype. 37.0 x 16.1 mm, ventral view; 3. Holotype, dorsal view; 4. Paratype 2, dorsal view.

5-6. *Lyria* (*Lyria*) *gnionmeti* Poppe, 2001. 47.0 mm.

7. Detail of the spire of *Lyria* (*Lyria*) *grandidieri*.

